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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/804,427	03/18/2004	Terrance John Hermary	58255-010301	7221

45934 7590 04/17/2007

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EXAMINER

DETSCHER, MARISSA

ART UNIT	PAPER NUMBER
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2886

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/17/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/804,427	HERMARY ET AL.	
	Examiner	Art Unit	
	Marissa J. Detschel	2886	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 29-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 29-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The amendment filed on February 13, 2007, has been entered.

Response to Arguments

Applicant's arguments with respect to claims 1 and 2 have been considered but are moot in view of the new ground(s) of rejection.

The new grounds of rejection in view of applicant's amendment to the claims are set forth below under new prior art of Ralph et al. (USPN 6,969,004) and Kuchel et al. (USPN 5,135,309).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Ralph et al. (USPN 6,969,004).

Ralph discloses a scan head (Figure 1A below) for use in a scanner for measurement of non-specular surfaces by projecting light onto an object to be scanned, and by detecting light reflected from the object;

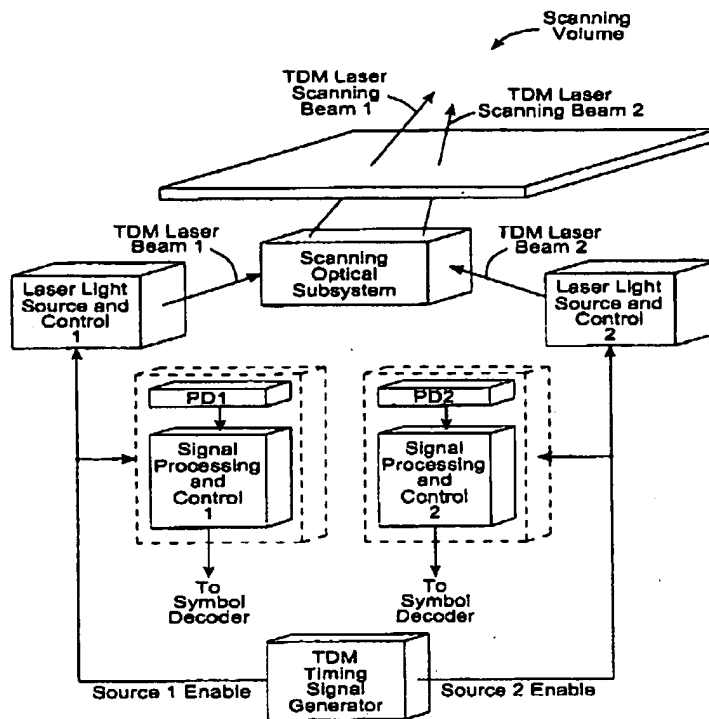


FIG. 1A

The scan head having precisely two spaced light projectors (Laser light Source and Control 1 and 2 and Scanning Optical Subsystem) and two spaced light detectors (PD1 and PD2);

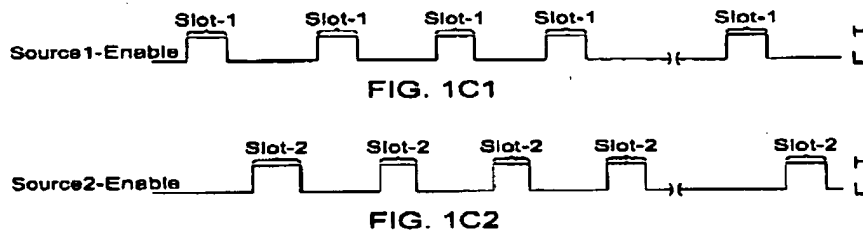
Wherein the projectors, when operating, operate in time-division multiplexed mode (column 22, lines 10-46 and column 23, lines 16-41) ;

Wherein the detectors, when operating, each operate in synchrony to receive light from both projectors that is reflected from the object, and to provide output image data representing an image of the whole or a selected portion of the object (column 22, lines 10-46 and column 23, lines 16-41); and

Wherein the scanning in time-division multiplexed mode provides redundancy in the detector outputs for facilitating discrimination and identification of the image from the image data (column 24, lines 12-20).

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During operation of the scan head of Ralph, time-division multiplexed laser scanning operations and signal processing operations are performed (column 21, lines 19-24). These operations are performed as a plurality of non-overlapping time slots as illustrated in Figure 1C2 below.



In time slot 1, the laser beam is projected from Laser Source 1 to the sample and the photosensor PD1 is operably coupled to the Signal and Processing Control 1 that performs bar code detection and decoding operations on data signals derived from the output of PD1. Also, in time slot 1, the Laser Source 2 is disabled and the photosensor P2 is disabled. (column 22, lines 10-46) Likewise, In time slot 2, the laser beam is projected from Laser Source 2 to the sample and the photosensor PD2 is operably coupled to the Signal and Processing Control 2 that performs bar code detection and decoding operations on data signals derived from the output of PD2. Also, in time slot 2, the Laser Source 1 is disabled and the photosensor P1 is disabled. (column 23, lines 16-41)

Therefore, the projectors (Laser Source 1 and 2) operate in time-division multiplexed mode. The detectors (PD1 and PD2) operate in synchrony to receive light from the projectors that is reflected from the object (Scanning Volume) and output image data representing an image of the bar code. The scanning in time-division multiplexed mode provides redundancy in the detector outputs (see Figure 1C2) to help perform bar code detection on data signals derived from the detectors. The use of the time-division multiplexed laser scanning and signal processing operations enable the system to scan the scanning volume to detect and decode

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bar code symbols while avoiding optical crosstalk and light interference from ambient light and unwanted reflections (column 24, lines 12-20).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ralph et al. (USPN 6,969,004) as applied to claim 1 above, and in view of Kuchel (USPN 5,135,309).

In regards to claim 2, Ralph does not disclose the use of a coded light projector as at least one of the projectors. Kuchel discloses an apparatus for measuring an object surface by projecting bar patterns (i.e. coded light) onto the surface of the object and detecting phase differences between the bar patterns and using the phase differences between the bar patterns to detect ambiguities in height measurements of the surface of the object. (column 3, lines 17-42)

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the bar pattern projectors of Kuchel as the projectors in the device of Ralph in order to detect ambiguities on the surface of an object to be measured.

Claims 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ralph et al. (USPN 6,969,004) in view of Kuchel (USPN 5,135,309) as applied to claim 2 above, and further in view of applicant's admitted prior art.

Regarding claims 29-31, Ralph in view of Kuchel does not disclose that the coded light is a de Bruijn pattern. However, the applicant discloses in the specification in paragraphs [0023]-[0026] that the use of these types of coding patterns to analyze received light of the coded pattern and locate a parameter (i.e. length) unique within the coded sequence is well known in the art. Furthermore, specifically regarding claims 30 and 31, these de Bruijn patterns comprise bright bands and dark bands and the pattern components are of uniform length. The length of an element of the pattern is disclosed as three units of selected length, the length of a mark (i.e. a bright band) is one or two units of the same selected length, and the length of a space (i.e. dark band) is one or two units of the same selected length. These lengths define a duty cycle of the pattern components.

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize a de Bruijn pattern as the coded pattern of Ralph in view of Kuchel in order to analyze received light of the coded pattern and locate a parameter (i.e. length) unique within the coded sequence.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marissa J. Detschel whose telephone number is 571-272-2716. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tarifur Chowdhury can be reached on 571-272-2287. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

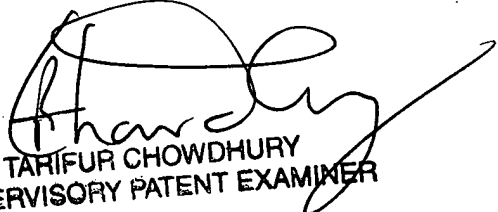
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MJD

April 10, 2007



TARIFUR CHOWDHURY
SUPERVISORY PATENT EXAMINER